PHOTOGRAPHY, a new art of the nineteenth century, and the first visual medium derived directly from the scientific revolution

The DAGUERREOTYPE, the earliest form of photography, was invented in 1839. Specifically, the invention combined two scientific principles which had been known for some time. The first of these was optical. Light passing through a small aperture in one wall of a dark room (or "camera obscura") projects an image on the opposite wall. The camera obscura had been a familiar tool of artists and scientists from the 16th century. From the 18th century it had been common in portable form, designed to project on paper or glass an image that the artist could trace. The second principle was chemical. In 1727, Johann Heinrich Schulze had shown that certain chemicals, especially silver halides, turn dark when exposed to light. The inventors of photography used such chemicals to render permanent the insubstantial image formed in the camera obscura.

1. DAGUERREOTYPE, a pictorial image named after its founder, J. L. M. Daguerre, a Frenchman. Invented in 1839.

At a special joint meeting of the Academy of Sciences and the Academy of Fine Arts in Paris on August 19, 1839, François Arago, one of France's most distinguished scientists, spoke for Daguerre. The address was widely reported, and given below is the report from a London newspaper of a few days later, "The Daguerre Secret," Literary Gazette (London), No. 1179 (Aug. 24, 1839), 538-539.

A sheet of copper, plated with silver, is washed carefully in a solution of nitric acid, which removes from it all the extraneous matters on its surface, and especially any traces of copper from the silver surface. A slight degree of friction is requisite in this process, but it must not be applied always in the same direction. M. Daguerre has observed, that with the friction used in a particular manner, a sheet of copper thus plated with silver answered better than a sheet of silver alone; and he infers from this, that voltaic agency is not unconnected with the effect. When the sheet is thus prepared, it is placed in a closed box and exposed to the vapour of iodine. This vapour is made to pass through a very fine sheet of gauze, to render its distribution more equable over the surface of the silver, and in order to effect this object (which is quite indispensable) more certainly, the sheet has a small metallic rim raised all around its edges. A thin coating, of a yellow colour, is thus formed on the surface of the sheet, which is estimated by M. Dumas* at not more than a *millionth part of a millimetre* in thickness. The sheet, when covered with this substance, is of the most excessive sensibility to light; and is thus ready for the camera obscura. M.